

Two new species of the genus *Lymeon* (Hymenoptera: Ichneumonidae: Cryptinae: Cryptini) from Mexico

Два новых вида рода *Lymeon* (Hymenoptera: Ichneumonidae: Cryptinae: Cryptini) из Мексики

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This article is an addendum to the revision of the tribe Cryptini of Mexico (Kasparyan & Ruíz-Cancino, 2008a). Two new species, *Lymeon alboniger* sp. nov. and *L. maculipennis* sp. nov., from the State of Veracruz, Mexico, are described.

Статья является дополнением к ревизии трибы Cryptini фауны Мексики (Kasparyan & Ruíz-Cancino, 2008a). Два новых вида, *Lymeon alboniger* sp. nov. и *L. maculipennis* sp. nov., описаны из штата Веракруз в Мексике.

Key words: taxonomy, Neotropical region, North America, new species

Ключевые слова: систематика, Неотропический регион, Северная Америка, новые виды

INTRODUCTION

The Mexican fauna of the tribe Cryptini was revised in two monographs (Kasparyan & Ruíz-Cancino, 2005, 2008a) and currently comprises over 300 species within 56 genera.

Lymeon Förster, 1869 is one of the largest genera of Cryptini. It is represented by about 86 species occurring almost exclusively in the Neotropical region (Yu et al., 2016), except for four species in the Nearctic region (Townes & Townes, 1962). Species of the genus usually inhabit dense undergrowth of forests where females attack small cocoons of various insects and egg cocoons of spiders (Townes, 1970).

Thirty-five species of *Lymeon* occurring in North and Central Americas and Caribbean Islands were reviewed and keyed by Kasparyan & Ruíz-Cancino (2004; 2008a); 29 species of them were recorded from Mexico. After that, three more species of *Lymeon* were described from this country (Kasparyan & Ruíz-Cancino, 2008b; Kasparyan, 2013). Thus, currently Mexican fauna of the genus includes 32 species.

The aim of this work is to describe two new species of *Lymeon* from the State of Veracruz, Mexico.

MATERIAL AND METHODS

This work is based on two my monographs on Mexican Cryptini (Kasparyan & Ruíz-Cancino, 2004, 2008a) where the *Lymeon* species occurring in Mexico and adjacent regions were revised. In addition to previously known taxa, two undescribed species of *Lymeon* were discovered from the new ichneumonid material recently collected in the State of Veracruz in Mexico.

Holotypes of both species are deposited in the Universidad Nacional Autónoma de México, DF, Mexico (UNAM) and paratype in the Zoological Institute of the Russian Academy of Sciences, St Petersburg, Russia (ZIN). Morphological terminology mainly follows those of Townes (1970). Taxonomy follows the catalogue TaxaPad (Yu et al., 2016). Layer photographs were taken in ZIN with a Canon EOS 70D digital camera attached to an Olympus SZX10

stereomicroscope, and partially focused images were assembled with Helicon Focus 6 Pro software.

TAXONOMY

Order **HYMENOPTERA**

Family **ICHNEUMONIDAE**

Subfamily **CRYPTINAE**

Tribe **CRYPTINI**

Genus *Lymeon* Förster, 1869

Type species: *Lymeon annulicorne* Ashmead, 1894
(= *L. orbis* Say, 1835).

Lymeon alboniger sp. nov.

(Figs 1–3, 6, 7)

Holotype. Female; **Mexico**, Veracruz, Xalapa, N 19°30', W 96°55', 1279 m, Malaise trap, 7–20.VIII.2015, coll. M. López-Ortega (UNAM).

Paratype. 1 female (ZIN), same data as holotype but 10–21.III.2015.

Etymology. The name of the new species refers to white and black colour pattern of its body.

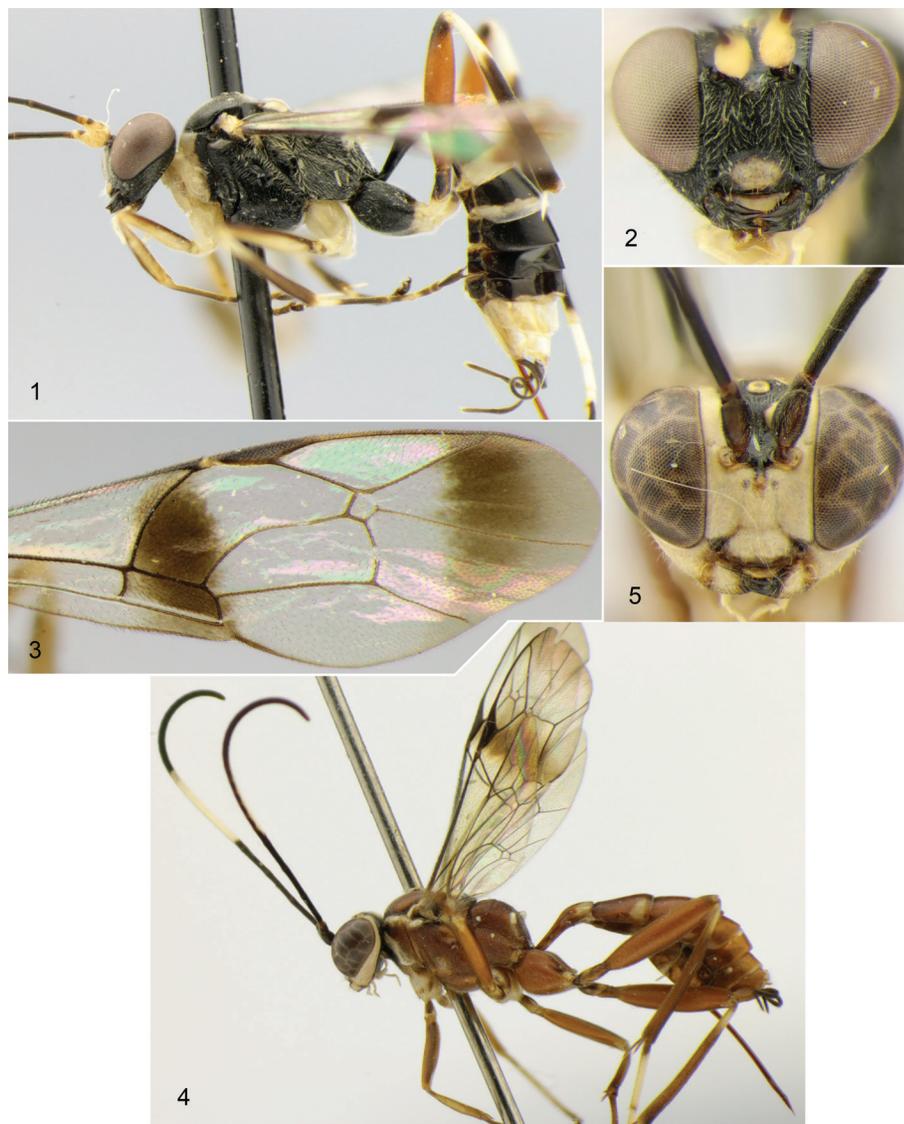
Comparative diagnosis. The new species by its colour pattern (wings with dark bands, head black with white markings, metasoma black with white apical bands on tergites 1–3 and tergites 4–5 completely black) is similar to *L. rufithorax* (Cameron, 1886), *L. rufinotum* Kasparyan & Ruíz-Cancino, 2004 and *L. clebschi* Kasparyan, 2013, but differs from these species in having completely black head (except for clypeus – Fig. 2), black mesosoma (except for prothorax), and entirely white tergites 7 and 8 (Fig. 1). *Lymeon alboniger* is also distinct in having middle and hind basitarsi white in basal half and black in apical half (Fig. 1) while in *L. clebschi* (which has black mesosoma) and most other species of *Lymeon* middle and hind basitarsi are usually fuscous at base and pale apically, or uniformly coloured.

Description. Female (holotype). Fore wing 5.5 mm long. Antenna with 20 flagellomeres; flagellomere 1 almost as long as flagellomere 2; flagellomeres 1 and 2 com-

bined 1.5 times as long as maximum diameter of eye; flagellomeres 4–9 moderately compressed, flagellomere 7 about twice as long as wide and 1.7 times as wide as flagellomere 1. Face and frons mat, finely granulate, with inconspicuous punctures and fine pubescence. Malar space 0.65 times as long as basal mandibular width; malar sulcus absent. Temples very strongly narrowed behind eyes in dorsal view, and in profile widened downwards. Occipital carina before connection with hypostomal carina almost straight; oral carina (section of hypostomal carina from mandible to occipital carina) 0.45 times as long as basal mandibular width and slightly higher than occipital carina.

Epomia absent. Notaulus moderately sharp, thin, extending almost to centre of mesoscutum. Mesoscutum and mesosternum mat, finely granulate, without discernible punctures and with very fine pubescence; posterior 0.4 of mesoscutum medially with longitudinal wrinkles. Mesopleuron in upper half with longitudinal rugae; speculum moderately large, polished, impunctate; lower half of mesopleuron more or less smooth, with fine scarce punctures. Sternaulus broad and scabrous. Scutellum smooth, with very fine scarce punctures. Metapleuron with longitudinal rugosity and rather dense and long pubescence; upper division of metapleuron (just beyond epimeron) more or less smooth, with long hairs, in lower part polished and impunctate. Propodeum with complete basal transverse carina; basad this carina evenly covered with very dense fine punctures and with median longitudinal carina instead of basal area; propodeum behind basal transverse carina with irregular rugosity. Apophyses rather large, more or less conical.

Fore wing with areolet rather large, about as long as section of second recurrent vein above bulla; nervulus distinctly ante-furcal; postnervulus intercepted at upper 0.35. Hind wing with nervellus intercepted at lower 0.45, its posterior portion strongly reclivous; brachiella obliterated. Hind femur 5.4 times as long as wide.



Figs 1–5. *Lymeon alboniger* sp. nov., female, holotype (1–3) and *L. maculipennis* sp. nov., female, holotype (4, 5): **1, 4**, habitus, lateral view; **2, 5**, head, frontal view; **3**, fore wing.

Tergites 2 and 3 distinctly and evenly granulate, with fine sparse short setae; tergite 4 with weaker granulation than tergites 2 and 3; tergite 5 almost polished. Upper valve of ovipositor from nodus to apex about 1.3 times as long as hind tarsomere 2 (Figs 6, 7); ovipositor sheath about as long as hind tibia.

Scape and pedicel of antenna pale yellow (Figs 1, 2), base and apex of pedicel

brownish dorsally; flagellum blackish, flagellomeres 4–9 completely white. Head black with clypeus whitish (except for black margins); palpi and labrum whitish. Mesosoma black with propleura and pronotum yellowish white (except for black posterolateral margin of pronotum); tegula blackish with whitish spot posteriorly; stripe on subtegular ridge, upper part of epimeron, scutellum dorsally and posteriorly, apex of postscutel-

lum, and apophyses whitish. Fore wing with two blackish brown transverse bands: basal band covering brachial cell and lower half of discocubital cell just before pterostigma, and subapical band covering distal part of the wing excluding apex (Fig. 3). Fore and mid legs with coxae and trochanters completely white, trochantelli brownish with whitish markings, femora brownish with posteroventral sides whitish, tibiae pale brown with basal 0.2 white and dull whitish anteriorly, fore tibial spur pale brown and mid spurs white, tarsi brownish (mid tarsus with basal 0.25 of basitarsus white and white markings at tarsomeres 2 and 3). Hind leg with coxa black excluding white apex; trochanter white with apex dorsally brown; trochantellus blackish with reddish ventral stripe; femur red, blackish dorsally in apical 0.15; tibia black with basal 0.25 white; tibial spurs white; basitarsus white in basal 0.45 and extreme apex, black in apical

Male. Unknown.

Distribution. Mexico (Veracruz).

***Lymeon maculipennis* sp. nov.**

(Figs 4, 5, 8, 9)

Holotype. Female; **Mexico, Veracruz**, Municipio Teocelo, Tejerias, N 19°21', W 96°54', Malaise trap, 924 m, 28.VI–23.VII.2015, coll. M. López-Ortega (UNAM).

Etymology. The name of new species refers to dark spots on its wings.

Comparative diagnosis. The new species is closely related to *L. yanegai* Kasparyan, 2004 from Honduras; both species can easily be distinguished from all other known species of *Lymeon* by almost entirely light brownish red body with predominantly yellow head (Figs 4, 5) and two small median teeth on ventral margin of clypeus. These two species can be distinguished from each other by characters given in the table below.

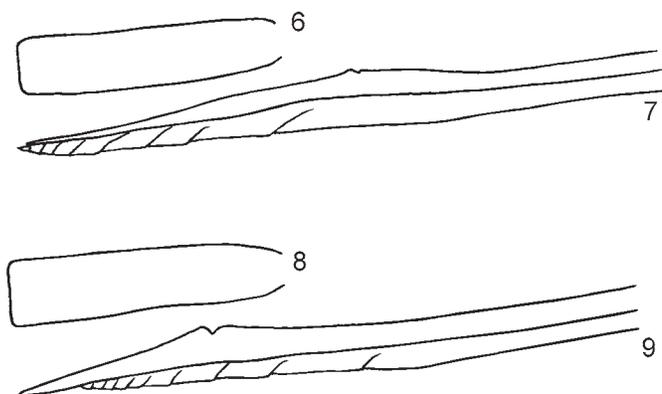
	<i>L. maculipennis</i>	<i>L. yanegai</i>
Fore wing	with fuscous median band and infumate distally (Fig. 4)	slightly and evenly infuscate
Second tergite	with setiferous punctures scattered and setae very short	with dense setiferous punctures; distances between punctures more or less equal to length of setae
Metasomal sternites 1–4	completely brownish	light yellow to whitish yellow
Scape and pedicel of antenna	blackish with brownish tinge ventrally	scape brown, yellowish ventrally; pedicel dark brown
Fore coxa	white	yellowish red
Hind tibia	brownish with white subbasal ring	yellowish red
Pterostigma	blackish	dirty yellow

0.55, tarsomeres 2–4 completely white and tarsomere 5 dark brown. Metasomal tergites 1–3 black with broad white apical band, tergites 4–6 black and tergites 7 and 8 completely white (Fig. 1). Metasomal sternite 1 black, its membranous apical part very short, white; sternites 2–4 black with median longitudinal fold whitish; sternites 5–6 entirely blackish. Ovipositor sheath black.

Moreover, *L. yanegai* is characterised by more extensive yellow pattern on mesosoma (e.i. yellow speculum, prepectus, mesosternum and metapleuron) than *L. maculipennis*.

Description. Female. Fore wing length 7.0 mm. Antenna with 24 flagellomeres; flagellomeres 1 and 2 subequal in length, and combined about 1.25 times as long as

Figs 6–9. *Lymeon alboniger* sp. nov., female (6, 7) and *L. maculipennis* sp. nov., female (8, 9): 6, 8, hind tarsomere 2; 7, 9, apex of ovipositor.



maximum diameter of eye; flagellomeres 4–10 weakly compressed; flagellomere 7 about 1.8 times as long as wide, its maximum width about 1.3 times width of flagellomere 1 at the middle; flagellomeres 11 and following subcylindrical, almost not flattened ventrally; subapical flagellomeres about 1.2 as long as wide; flagellum apically (apical 11–12 flagellomeres) weakly but distinctly tapered. Face mat, very finely granulate and densely, finely and rather evenly punctate. Clypeus finely granulate, with sparse punctures; its lower margin sharp, with two small median teeth. Frons finely granulate with dense and moderately fine punctures, its lower half above antennal sockets with a pair of smooth superficial concavities separated by median ridge; ocellar area rugose-punctate. Head strongly narrowed behind eyes in dorsal view. Head, in profile, with temple broadened to mandibles ventrally; maximum length of temple about 1.5 times its minimum length at level of dorsal 0.25 of eye. Occipital carina weakly sinuate before its connection with hypostomal carina; oral carina (section of hypostomal carina from mandible to occipital carina) weakly raised, short, about 0.65 as long as malar space. Malar space 0.45 times as long as basal mandibular width.

Epomia weak but discernible just above transverse groove of pronotum. Notaulus distinct, deep and reaching middle of

mesoscutum. Mesoscutum mat, punctato-rugose; punctures shallow, indistinct, very small and dense; mesoscutum behind its middle in central third punctato-striate. Prescutellar groove with 8 short transverse rugae. Scutellum smooth with fine punctures. Mesopleuron scabrous, i.e. irregularly, densely and finely punctato-rugose; prepectus smooth, densely and very finely punctate; speculum large, polished. Meta-pleuron scabrous, with dense thin oblique rugae and fine punctures between rugae; its upper division (just behind upper part of epimeron) smooth, with fine punctures. Groove between propodeum and postscutellum narrow and deep. Propodeum before basal transverse carina mat, granulate, with scattered punctures; basal area very narrow posteriorly and broad anteriorly. Propodeum behind basal transverse carina entirely scabrous (with irregular fine rugosity); apical transverse carina absent. Apophyses short, almost conical, slightly depressed, rounded at apex (Fig. 4). Fore wing with areolet comparatively large, about 0.8 times as long as second recurrent vein above bulla (Fig. 4). Nervulus weakly anterfurcal; post-nervulus intercepted at upper 0.4. Hind wing with nervellus intercepted at lower 0.33; brachiella present, reaching about 0.6 of distance to wing margin. Hind leg with femur 5.0 times as long as wide and proportion of tarsomeres 5.0 : 2.2 : 1.6 : 0.6 : 1.7.

Metasomal segment 1 without dorsolateral and ventrolateral carinae. Tergite 2 at posterior margin 1.6 times as wide as at anterior margin and 1.1 times as wide as long. Tergite 2 and following tergites mat, evenly and finely granulate, with very scarce setiferous punctures; setae short. Tip of dorsal valve of ovipositor behind nodus moderately stout, about 0.7 times as long as hind tarsomere 2 (Figs 8, 9). Ovipositor as long as hind tibia; sheath about 0.65 times as long as hind tibia.

Antenna black; flagellomeres 4–10 predominantly white, blackish ventrally; scape and pedicel blackish with brownish tinge ventrally. Head light yellow with lower edge of clypeus and clypeal foveae brown (Fig. 4); marking between antennal sockets, broad median longitudinal strip on frons, ocellar area, vertex (except for eye orbits) and occiput black. Mesosoma and metasoma almost completely light brownish red; propleuron partly and sutures on mesoscutum, scutellum and metanotum blackish; pronotum widely on anterior and dorsolateral margins, tegula, scutellum dorsally, subtegular ridge, obscure spot on mesopleuron just above anterior end of sternaulus, apex of mesepimeron, large spot on metapleuron just behind upper part of mesepimeron, and apophyses of propodeum yellow or whitish yellow. Fore and mid legs predominantly brownish red; fore coxa white with small posterior and dorsoapical brown markings; mid coxa white with large anterior and posterior light reddish spots; fore and mid trochanters brown with apical whitish markings; fore femur entirely brown posteriorly, mid femur brownish posteriorly at base and apex; posterior small basal stripe on fore and mid tibiae, and fore and mid tarsomeres 5 entirely brown. Metasoma with apical 0.2 of tergite 1 and hind corners of tergite 2 whitish yellow. All metasomal sternites completely brownish. Ovipositor sheath blackish.

Male. Unknown.

Distribution. Mexico (Veracruz).

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